

WHAT IS CLAIMED IS:

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A4
1. A method for improving voice recognition accuracy when a user submits a query by voice to search a domain of items, the method comprising:
- 5 prompting a user to submit a set of characters of the voice query, and
 receiving the set of characters from the user;
 identifying a subset of items in the domain that correspond to the set of
characters;
 generating a dynamic grammar based at least in part on the subset of
items;
10 prompting the user to submit the voice query, and receiving the voice
query from the user; and
 interpreting the voice query using the dynamic grammar.
2. The method as in Claim 1, wherein prompting a user to submit a set of
characters comprises prompting the user to submit the first N characters of a query term,
15 where N is greater than 1.
3. The method as defined in Claim 1, wherein prompting a user to submit a
set of characters comprises prompting the user to submit a set of characters of an
author's name.
4. The method as defined in Claim 3, wherein generating a dynamic
20 grammar comprises incorporating into the grammar names of authors of the items
within the subset of items.
5. The method as defined in Claim 4, wherein the dynamic grammar
consists essentially of the names of the authors of the items within the subset of items.
6. The method as defined in Claim 4, further comprising incorporating into
25 the dynamic grammar non-author terms extracted from the subset of items.
7. The method as defined in Claim 1, wherein prompting a user to submit a
set of characters comprises prompting the user to select the characters on a telephone
keypad.
8. The method as defined in Claim 7, wherein prompting a user to submit a
30 set of characters further comprises prompting the user to utter the characters, and

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wherein receiving the set of characters comprises using the keypad entries of the characters to interpret utterances by the user of the characters.

9. The method as defined in Claim 1, wherein generating a dynamic grammar comprises extracting text from the subset of items.

10. The method as defined in Claim 9, wherein extracting text from the subset of items comprises extracting the text from a database field corresponding to a search context of the query.

11. The method as defined in Claim 1, further comprising storing the dynamic grammar within a cache for subsequent use.

12. The method as defined in Claim 1, wherein prompting a user to submit a set of characters comprises prompting the user to enter a fixed number of characters, wherein the fixed number is selected based on a target grammar size.

13. The method as defined in Claim 1, wherein receiving the set of characters comprises determining in real time whether a number of entered characters is sufficient to produce a grammar that falls below a threshold size.

14. The method as defined in Claim 1, further comprising:

executing a search using the voice query as interpreted using the dynamic grammar to identify a set of search result items;

providing the user an option to add an additional query term to the voice query to refine the search;

generating a second dynamic grammar at least in part from the set of search result items; and

receiving a voice entry of the additional query term from the user, and interpreting the voice entry using the second dynamic grammar.

15. A method for improving voice recognition accuracy when a user submits a query by voice to search a domain of items, the method comprising:

receiving a set of characters entered by a user, the set of characters representing a portion of a query;

selecting a grammar which is derived from text extracted from a subset of items that correspond to the set of characters entered by the user; and

providing the grammar to a voice recognition system for use in interpreting the query as entered by the user by voice.

16. The method as defined in Claim 15, wherein selecting a grammar comprises:

executing an initial search to identify the subset of items that correspond to the set of characters; and

extracting text from the subset of items for incorporation into the grammar.

17. The method as defined in Claim 16, wherein extracting text from the subset of items comprises extracting the text from a database field corresponding to a search context of the query.

18. The method as defined in Claim 17, wherein the search context comprises an author search, and the database field is an author field.

19. The method as defined in Claim 15, wherein selecting a grammar comprises reading a previously generated grammar from memory based on the set of characters entered by the user.

20. The method as in Claim 15, wherein receiving a set of characters comprises receiving the first N characters of a query term, where N is greater than 1.

21. The method as in Claim 15, wherein receiving a set of characters comprises receiving characters entered at least in-part using a telephone keypad.

22. The method as in Claim 15, wherein receiving a set of characters comprises using a telephone keypad entry of a character by the user to interpret an utterance of the character by the user.

23. The method as defined in Claim 15, wherein receiving a set of characters comprises determining in real time whether a number of entered characters is sufficient to produce a grammar that falls below a threshold size.

24. A system for conducting searches by voice, comprising:

a database of items;

a query server which searches the database of items according to voice queries from users, the query server coupled to a voice recognition system which interprets the voice queries according to grammars;

a first code module which causes a user to be prompted to enter a set of characters of a query; and

a second code module which causes the user to be prompted to utter the query;

5 wherein the query server is programmed to use the set of characters to select a grammar for use by the voice recognition system to interpret the query as uttered by the user.

25. The system as defined in Claim 24, wherein the first and second code modules comprise voiceXML coding.

10 26. The system as defined in Claim 24, wherein the query server selects the grammar by at least:

executing a preliminary search to identify a subset of items that match the set of characters; and

extracting text from the subset of items to incorporate into grammar.

15 27. The system as defined in Claim 26, wherein the query server is programmed to extract author names from the subset of items to generate a grammar for performing a voice-based author search.

28. The system as defined in Claim 24, wherein the query server is programmed to select the grammar from memory using the set of characters.

20 29. The system as defined in Claim 24, wherein the set of characters is a set of the first N letters of a query term, where N is greater than 1.

30. The system as defined in Claim 29, wherein the query term is a name of an author.

25 31. The system as defined in Claim 29, wherein N is selected based on a target grammar size.

32. The system as defined in Claim 24, wherein the first code module prompts the user to both utter, and enter on a telephone keypad, each alphabetic character of the set.

30 33. A method of assisting users in locating items in a database using voice queries, the method comprising:

receiving a voice query from a user, and identifying a set of search result items that are responsive to the voice query;

providing the user an option to refine the query by adding an additional query term;

5 generating a grammar by at least extracting text from the set of search result items; and

using the grammar to interpret an utterance by the user of an additional query term.

34. The method as defined in Claim 33, wherein generating a grammar comprises extracting text from a database field corresponding to a search context of the query.

35. The method as defined in Claim 33, wherein using the grammar to interpret an utterance comprises using the grammar to interpret utterances of multiple additional query terms by the user.

36. The method as defined in Claim 33, wherein the grammar is generated in response to selection by the user of the option to add an additional query term.

37. The method as defined in Claim 33, wherein the option to refine the query is presented to the user only if the number of items in the set exceeds a predefined threshold.

38. The method as defined in Claim 33, further comprising storing the grammar in a cache for use with subsequent query submissions.